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Control No. 487762
29 July 1958

MEMORANDUM FOR: Economic Defense Intelligence Committee

FROM : Chairman, EDIC

SUBJECT : Sino-Soviet Bloc Nickel Position, 1957

REFERENCE : EDIC Case No. 24, SECRET

File Copy

1. The attached intelligence document on the Sino-Soviet Bloc Nickel Position, 1957 was prepared by CIA and coordinated with DFI in response to the reference Case No. 24 initiated by the Department of Commerce. It is now distributed for review and acceptance by EDIC members.

2. If no request for committee discussion of this document is received prior to the close of business 8 August 1958, it will be regarded as approved and the case will be closed.

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[redacted]

Chairman

Attachment:
Sino-Soviet Bloc Nickel Position, 1957

Distribution:
Cat B - (3-5, 8, 10)
D - (All)
E - (1)

25X1A9a [redacted]

Deputy Director (Coordination)

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Sino-Soviet Bloc Nickel Position, 1957

A. Summary and Conclusions

The apparent supply of nickel in the Sino-Soviet Bloc in 1957 was sufficient to meet the indicated requirements for direct military applications and to provide for a relatively low level of consumption for non-military uses.

B. Source of Supply

Total Bloc supplies are estimated at 59,600 short tons including production of approximately 59,500 short tons and net imports from the Free World of about 100 tons. Except for a small amount - probably less than 200 short tons - produced in East Germany, all of the Bloc's production of nickel came from the USSR. Other Bloc countries are almost entirely dependent on the USSR for their supplies of nickel. Soviet shipments to the European Satellites approximated 5,700 short tons in 1957, most of which was exported to East Germany, Czechoslovakia, and Poland. Soviet exports to Communist China may have amounted to almost 1,200 short tons. Exports from the USSR to non-Bloc countries (Finland and Yugoslavia) are tentatively estimated at 200 to 300 short tons.

The dependence of the Bloc on Soviet production is expected to continue, although current plans provide for the development of additional supplies in East Germany and Czechoslovakia. Production in East Germany is scheduled to increase to about 1,100 short tons by 1960, but it is doubtful that this goal will be achieved. Czechoslovakia has begun to extract nickel from Albanian iron-nickel ore and, by 1960, production may amount to 900 to 1,800 short tons if present plans are fulfilled. Until 1955 Poland was a small producer of nickel but it is believed that the nickel deposits in that country have been exhausted.

C. Consumption Pattern - Shortage

As the use of nickel is closely associated with that of steel, the following table compares the availability of nickel per ton of steel produced in the U.S., the Free World, and in sectors of the Sino-Soviet Bloc in 1957. The data indicate that although the availability of nickel per ton of steel production in the Sino-Soviet Bloc as a whole was 75 percent of that of the Free World, the share of the European Satellites and Communist China was only 30 percent and 20 percent respectively of the Free World figure. Availability in the USSR, however, was 85 percent of that in the United States, and nearly equivalent to the Free World average.

Table

Area	Pounds of Nickel Available per Short Ton of Crude Steel Produced 1957
Total Free World	2.0
U.S.	2.2
Total Sino-Soviet Bloc	1.5
USSR	1.9
European Satellites	0.6*
Communist China	0.4

* If all clandestine shipments in 1957 were directed to the European Satellites, the apparent supply in these countries would have approximated 0.7 pounds of nickel per ton of crude steel.

To have attained the Free World (not the U.S.) level of nickel availability in 1957 it would have been necessary for the Bloc to have increased its production by about 21,000 tons or 35 percent.

Although the nickel supply of the USSR is adequate to provide for military requirements in present peace-time conditions, these priority demands are estimated to consume nearly 65 percent of the apparent supply. Nickel available for non-military applications in the USSR in 1957 is estimated at 0.9 pounds per short ton of steel mill products used for those purposes - 39 percent of the 2.3 pounds so consumed in the U.S. This comparison could become even less favorable to the USSR if, because of the continued denial of Free World nickel to the Bloc, the USSR is forced to divert increasing amounts of Soviet production to the European Satellites and China in order to provide more adequately for the growing requirements of these countries.

Consumption of nickel in the USSR for other than high priority applications is further inhibited by the high cost of the metal resulting from the location and grade of indigenous nickel bearing ores. The investment of ~25,000 per ton of new capacity envisaged by the directives of the Sixth Five Year Plan is more than five times that required for the International Nickel Company's new Thompson mine in Northern Manitoba. The internal price of nickel of R. 24,000 per ton is almost three times the U.S. price in relation to ruble/dollar prices of ordinary steel mill products.

D. Substitution

The Soviets have been ingenious in devising alloys which conserve scarce alloying elements with the result that they frequently use alloys containing

smaller percentages of nickel than the United States uses for similar purposes. For example, a July 1957 issue of an official organ of the Soviet Government 1/ discussed some ways in which chromium, titanium, and nitrogen can be used in ferrous alloys to lessen the requirements for nickel. This article summarized the problem, as follows:

> The great increase in the production of stainless steel and heat-resistant alloys provided for in the Sixth Five Year Plan will require a great quantity of nickel. Therefore, the economy of nickel and the finding of total substitutes of nickel-containing steels are of great national economic importance.
>
> To hasten the introduction of high-chromium steel, it is necessary to redistribute funds which are allotted to consumers of stainless steel. Steel with nickel should be provided only where substitutes cannot be used.... Literature should be published on substitutes for chromium-nickel steels.

E. Plans - Plan Fulfillment

The expansion of the Soviet nickel industry scheduled for the early years of the Sixth Five Year Plan has not been attained. The Plan called for an increase of 64 percent in production and for investment in the nickel-cobalt industry equivalent to more than $100 million per year during 1956-1960. In 1956 and 1957, however, the estimated increases in production were only 50 to 60 percent of the average annual increases required to meet the 1960 goal.

The goal for increasing the nickel supply during the Seven Year Plan (1959-1965) has not been announced. Discussions of plans for expanding individual facilities, however, notably Norilsk, Pechenga, Monchegorsk and Orsk, indicate that the program is at least as large as that provided in the original Sixth Five Year Plan. (Although this will result in a supply nearly double that of 1957 its adequacy for the expanding needs of the economy during the extended period of the program will depend largely on the rate of increase in military requirements.) Real costs will almost certainly be substantially higher than those of commercial Free World producers.

1/ Moscow, Promyshlenno-Ekonomicheskaya Gazeta (an organ of the Scientific-Technical Council of Ministers of the USSR), 12 July 1957.